DEC STD 103-1 Electromagnetic Compatibility (EMC) - Documentation and Approval Process

DOCUMENT IDENTIFIER: A-DS-EL00103-01-0000 Rev B, 11-Jul-1990

ABSTRACT: This standard defines documentation requirements for the EMC certification process. It includes information on internal and external test records, EMC product labeling requirements, user and manufacturer's compliance statements, the compliance approval process external to Digital, and registration/license numbers.

APPLICABILITY: The requirements of this standard are the mandatory EMC documentation and approval processes for all Digital hardware products that complete the test and documentation cycle after the release date of this standard.

STATUS: APPROVED 11-Jul-1990; use VTX SMC for current status.

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1 INTRODUCTION

All electromagnetic compatibility (EMC) reports on which product approvals or qualifications are based must meet the requirements of ISO Guide 45, *Guidelines for the Presentation of Test Reports*. This standard explains how test results shall be reported, what the approval process is within Digital, and how the products shall be labeled.

1.1 PURPOSE

This standard defines documentation requirements for the EMC process. It includes information on internal and external test records, EMC product labelling requirements, user information and manufacturer's compliance statements, the compliance approval process, and registration/license numbers.

1.2 SCOPE

The requirements of this standard are mandatory for the EMC documentation and approval processes of all hardware products marketed by Digital. These requirements apply to those products that complete the test and documentation cycle after the release date of this standard.

1.2.1 BUYOUT POLICY

It is Digital's policy that all products intended for sale meet applicable international regulatory requirements. It is essential that a representative of the EMC (electromagnetic compatibility) engineering domain be involved in ANY buyout process, beginning with the purchasing stage, to ensure that the buyout product will be in compliance with the appropriate EMC requirements.

It is the responsibility of the EMC Domain to establish the policy and process to ensure compliance with EMC regulatory requirements for all products, including buyouts.

Contact the EMC Domain Office for the policy and procedure that applies for buyout products. For a list of EMC Managers by Product Group, send a request to LESREG::EMCDOMAIN.

2 GENERAL EMC DOCUMENTATION REQUIREMENTS

Subheads 2.1 and 2.2 specify how EMC test reports fulfill the requirements of ISO 45. Throughout this standard, references are made to that document for report requirements. Conformance with the requirements of this standard ensures compliance with that document. See Appendix A for more detail.

2.1 INTERNAL TEST REPORTS

2.1.1 Internal Test Reports - Overview

Internal test records are documents that detail the results of any EMC testing on products or system configurations. These records do not need to be submitted in any form to organizations or individuals outside Digital in order to obtain product approvals. They may contain references to unannounced products or project names. Internal test reports shall be marked as "Digital Internal Use Only".

2.1.2 Internal Test Report Contents

1. Each test report must be identified by a unique test number, consisting of two parts:
   a. A 3-character code for the test facility, assigned by the EMC Domain Office
   b. A unique 6-character (numeric) code for the specific test assigned by the test facility
2. Each page of the report must be numbered and have the test report identification according to ISO 45, paragraph 4.2.

   Example of a page header:

   EMC test report MLO123456, 1-Jun-1990, page 3 of 12
3. The test report shall clearly identify the device tested by the Digital part number (2-5-2 format) and the serial number of the device tested. If non-Digital equipment is tested, the complete nameplate information of the device shall be indicated in the test report (ISO 45, paragraph 4.5). For example:

   The name of device under test : Printserver 40 Plus
   The part number of the device under test: LPS40-D3
   The serial number of the actual unit tested: RI01426
4. The test report shall list the purpose of the test and the business group for which the test was performed (ISO 45, paragraph 4.6).
5. The test results shall be listed in tabular form and compared with the requirements (limits). Graphic data may be used to clarify or support the data, but it will not replace the need for tabular data (ISO 45, paragraph 4.12).

Freq MHz	Receiver Reading dB(µV)	Loss of LISN dB	Total dB(µV)	Limit Class A dB(µV)	Margin to Class A dB	Comments
0.160	62.0	1.2	63.2	66.0	- 2.8	Neutral, PL
0.160	58.0	1.2	59.2	66.0	- 6.8	QP, Neutral

NOTE: Margin is the safety region; positive results indicate a failure.

6. The test conditions, test equipment, and other relevant facts such as operating power, temperature, and relative humidity shall be listed in the test report. Photographs may be used to further document specific test conditions. For example:

   The nominal operating power during the test : 240 V/ 50 Hz
7. The report summary shall clearly state whether a product passed a specific part of DEC STD 103 test requirements, and identify any sections of DEC STD 103 to which the product was not evaluated. For example:

   DEC103-3 subhead 2, VDE 0877, FCC TP-5.
8. A statement that the test data is Digital proprietary.

   Example: Digital Internal Use Only

2.1.3 Internal Test Report Availability

Test reports are available upon request to any member of Digital's EMC community. The test facility is responsible for maintaining a file of their own test records. A record of each test, including those that do not yield the desired results, shall be maintained.

Internal test reports upon which a product announcement is based (Initial Qualification Reports) must be signed and dated by both the EMC manager of the group performing the qualification test and the person responsible for bringing the product to market. The product manager is considered to be the responsible person unless another individual is specifically identified. (ISO 45, paragraph 4.14)

This signed report must be mailed to the EMC Domain Office before product announcement.

2.2 EXTERNAL TEST REPORTS

2.2.1 External Test Reports - Overview

External test reports are EMC test and documentation reports intended for submission to non-Digital organizations or individuals; for example, government agencies (such as FCC, FTZ, and VCCI), original equipment manufacturers (OEMs), or end user customers.

All external requests for information, compliance status, and reports are handled by the Corporate EMC domain office and are dependent on the internal EMC test reports.

2.2.2 External Test Report Contents

External test reports must meet the requirements of ISO 45 provided they are not in conflict with the requirements of the customers or agencies requesting this information. See Appendix A for additional information about ISO 45.

External test reports are dependent on internal test reports and other documentation as required. They may contain more or less information depending on the purpose of the report.

2.3 RECORD RETENTION

Each test site is responsible for keeping a test record file and a proper means of protecting the reports from loss. One organization may archive reports for other organizations. The Corporate EMC Domain Manager shall keep the record(s) of the linkages between products, test report(s), and other approvals in the EMC domain.

3 PRODUCT LABELS

The following subheads define the process for labeling devices/systems and for providing required user information to meet the administrative and documentation requirements of FCC part 15 (Class A or B), German DBP-Directives 523/1969 and 1046/1984, and VCCI Article 12, 13 (Class I, II/Level 0, 4). More comprehensive information on product label content in general is available in *DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to be Sold*. The following information pertains to EMC related information only.

3.1 LABELING REQUIREMENTS

All computing devices must carry EMC related approval information on the product's regulatory label. Products that meet *DEC STD 103-3 Electromagnetic Compatibility (EMC) - Electromagnetic Interference (EMI) Requirements* meet CISPR-22 requirements that exist in Europe and Japan. Compliance to FCC part 15 requirements is also guaranteed if the limits and test process requirements in this standard are followed.

Products that were labeled under DEC STD 103 Rev B and are planned for shipment on or after 01-Jan-1992 MUST be ECOed to reflect the labelling requirements of DEC STD 103-1 (as well as the technical requirements of DEC103-3). The implementation date for these ECOs should not be later than 01-Sep-1990.

3.1.1 General Label Requirements for Class A Products

A general purpose EMC regulatory label for use on products that meet the requirements of DEC STD 103-3, Class A, is available as Digital part number 36-33285-01.

3.1.2 General Label Requirements for Class B Products

A general purpose EMC regulatory label for use on products that meet the requirements of DEC STD 103-3, Class B, is available as Digital part number 36-33285-02.

3.2 ADDITIONAL LABELLING REQUIREMENTS

The following EMC specific labelling requirements are either product or approval specific, such as a registration number that is unique to a product, or they are expected to become obsolete with the formal implementation of the EMC directive in Europe; therefore they not implemented on the standard label.

3.2.1 EMI Approval Number for Germany

All Class A ITE (EDP) devices need to obtain an EMI approval from the German Postoffice (DBP). This approval is granted by the ZZF (approval authority) after meeting the technical requirements defined by the FTZ (Telecom Engineering Center of the German Postoffice) based on an initial product type-test by the VDE (German test agency).

The EMI approval number is product specific and has this format:

FTZ C-nnn/yy

where nnn is an assigned number and yy is the year of the initial approval.

3.2.2 FCC Class B Certified CPU or System

The certification process requires that EMI test data be submitted before the FCC issues a registration number. Then the FCC must give written approval to market a personal computer for home use. The label for a certified product must also list the FCC identification for the product, using this format:

FCC ID: A09-PC100

Contact the EMC Domain Office for the FCC product certification process, and the EMC design group for FCC certification testing.

3.2.3 Class B Product Labeling for Germany

All products having demonstrated compliance to the German Class B EMI requirements (usually after a test by the VDE), must show conformance with Level B (General Operating License) on the label using this format:

DBP Directive 1046/1984

3.2.4 F-Mark License for Germany

Products may also have to carry the "F-mark" (VDE Radio Protection Mark) depending on what is defined in the product requirements document. The VDE Radio Protection Mark is a trademark, and written approval from the VDE has to be obtained before the F-mark can be incorporated on a product label. Contact the EMC Domain Office for F-mark registration and manufacturing audit test processes. Products must meet German VDE Class B requirements.

3.2.5 Class II (Class B) Product Marking for Japan

All products having demonstrated compliance to the Japan Class II EMI requirements have to carry the VCCI-mark (a VCCI-trademarked logo).

3.3 LABELLING FOR EXEMPT DEVICES

Certain devices are exempt from meeting FCC part 15 and Canadian DOC requirements. No similar exemptions exist in Europe.

Exempt devices defined in FCC part 15 are:

- A computing device utilized in any transportation vehicle, including motor vehicles and aircraft.
- An electronic control or power system solely utilized by a public utility or in an industrial plant.
- Devices solely used as industrial, commercial, and medical test equipment.
- Computing device utilized in an appliance; that is, microwave oven, dishwasher, clothes dryer, and so forth.

Exempt devices do not need to be labeled.

4 USER INFORMATION AND MANUFACTURERS STATEMENT OF COMPLIANCE

User information is explanatory and helpful information about the EMC attributes and properties of the devices and/or systems concerned. It should be placed on one of the first pages in the user documentation or owner's manual. Use of a "sticky back pouch and card" is no longer acceptable.

User information is required in the United States and Germany to inform the user about how configuring a system might affect the EMC properties, and it serves as a guide on what might be expected in terms of interference to radio communication services.

Subheads 4.1 through 4.8 contain the user manual statements to be used for the USA, Germany, and Japan. Statements of this nature are not required for other countries.

4.1 USER MANUAL STATEMENT FOR EQUIPMENT MEETING FCC CLASS A REQUIREMENTS

The proper wording for this statement is as follows.

> This equipment generates, uses, and may emit radio frequency. The equipment has been type tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such radio frequency interference.
>
> Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

4.2 USER MANUAL STATEMENT FOR EQUIPMENT CERTIFIED AS FCC CLASS B

The proper wording for this statement is as follows.

> This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart G of Part 15 of FCC Rules.
>
> Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.
>
> This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart G of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation.
>
> However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference using one or more of the following methods.
>
> - Re-orient the receiving antenna.
> - Relocate the computer or peripheral with respect to the receiver.
> - Move the computer or peripheral away from the receiver.
> - Plug the computer or peripheral into a different outlet so that they are on different branch circuits than the receiver.
>
> If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the booklet "How to Identify and Resolve Radio/TV Interference Problems," prepared by the Federal Communications Commission helpful. This booklet is available from the U.S. Government Printing Office, Washington D.C. 20402, Stock No. 004-000-00345-4.

Additional information on the need to interconnect the device with shielded (data) cables or the need for special devices, such as ferrite beads on cables, is required if such means of interference suppression was used in the qualification test for the device.

4.3 USER STATEMENT FOR COMMERCIAL/INDUSTRIAL EQUIPMENT MEETING FCC CLASS B REQUIREMENTS, BUT NOT CERTIFIED

This statement applies only for products that have been tested and found to comply with the technical requirements of FCC part 15 level B but do not need to be certified. This statement is not applicable for personal computers as defined by the FCC.

> This equipment generates and uses radio frequency energy. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart G of Part 15 of FCC Rules, which are designed to provide reasonable protection against such radio and television interference in a residential installation.
>
> However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, the user is encouraged to try to correct the interference.

4.4 USER INSTRUCTIONS FOR EQUIPMENT MEETING VDE CLASS B REQUIREMENTS FOR GERMANY

The following user instructions shall be integrated only into the user's guide or operator's manual (preferably in the first inner page) if a product has demonstrated compliance to German VDE Class B EMI requirements, usually after a type-test by VDE, and therefore is covered under a General EMI Operating License of the DBP.

> Für Bundesrepublik Deutschland und Berlin (West)
> For Federal Republic of Germany and West Berlin
> Pour la République féderale d'Allemagne et Berlin Ouest
>
> Bescheinigung des Herstellers/Importeurs
>
> Hiermit wird bescheinigt, daß die Einrichtung in Übereinstimmung mit den Bestimmungen der DBP-Verfügung 1046/84, Amtsblatt Nr. 163/1984, und Grenzwertklasse "B" der VDE0871, funkentstört ist.
>
> Der Deutschen Bundespost (DBP) wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.
>
> Betreiberhinweis
>
> Wir sind verpflichtet, Sie auf folgende Fakten hinzuweisen (DBP-Verfügung 1046/84, §2, Abschnitt 5):
>
> Das Gerät wurde funktechnisch sorgfältig entstört und geprüft. Beim Zusammenschalten mit anderen EDV-Geräten können im ungünstigsten Fall Funkstörungen entstehen, die dann im Einzelnen zusätzliche Funkentstörungs-Maßnahmen durch den Benutzer erfordern.
>
> Externe Datenkabel
>
> Sollte ein Austausch der von Digital spezifizierten Datenkabel nötig werden, muß der Betreiber für eine einwandfreie Funkentstörung sicherstellen, daß Austauschkabel im Aufbau und Abschirmqualität dem Digital Originalkabel entsprechen.

4.5 USER INSTRUCTIONS FOR EQUIPMENT MEETING VDE CLASS B REQUIREMENTS AND CARRYING VDE F-MARK FOR GERMANY

The following user instruction shall be integrated only into the user's guide or operator's manual (preferably in the first inner page) if a VDE Class B product has obtained a F-mark license from the German VDE testing agency.

Für Bundesrepublik Deutschland und Berlin (West)
For Federal Republic of Germany und West Berlin
Pour la République féderale d'Allemagne et Berlin Ouest

Bescheinigung des Herstellers/Importeurs

Dieses Gerät trägt als Nachweis, daß es den Funk-Entstöranforderungen der DBP-Verfügung 1046/1984 entspricht, das VDE-Funkschutzzeichen. Der Zusatz "0871-B/P" soll in Kurzform ausdrücken, daß es sich um ein peripheres (nicht selbständig betreibbares) Gerät handelt, das nur einzeln den Funk-Entstöranforderungen der Grenzwertklasse B nach DIN VDE 0871/6.78 und der DBP-Verfügung 1046/1984 entspricht.

Wird das Gerät innerhalb einer Anlage zusammen mit anderen Geräten betrieben, so muß bei Inanspruchnahme der "Allgemeinen (Betriebs-)Genehmigung" nach der DBP-Verfügung 1046/1984 die gesamte Anlage der Grenzwertklasse B nach DIN VDE 0871/6.78 sowie den Voraussetzungen nach §3 der DBP-Verfügung 1046/1984 entsprechen.

Dies ist in der Regel nur dann erfüllt, wenn das Gerät in einer Anlage betrieben wird, die typgeprüft und mit dem VDE- Funkschutzzeichen mit dem Zusatz "0871-B" gekennzeichnet ist.

Externe Datenkabel

Sollte ein Austausch der von Digital spezifizierten Datenkabel nötig werden, muß der Betreiber für eine einwandfreie Funkentstörung sicherstellen, daß Austauschkabel im Aufbau und Abschirmqualität dem Digital Originalkabel entsprechen.

4.6 USER INSTRUCTIONS FOR EQUIPMENT MEETING VDE CLASS A REQUIREMENTS FOR GERMANY

The following user instructions shall be integrated only into the user's guide or operator's manual (preferably in the first inner page) if a VDE Class A product has obtained an EMI Approval Number from the German ZZF Approval Authority.

Für Bundesrepublik Deutschland und Berlin (West)
For Federal Republic of Germany und West Berlin
Pour la République féderale d'Allemagne et Berlin Ouest

Hochfrequenzgerätezulassung und Betriebsgenehmigung

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß die Einrichtung in Übereinstimmung mit den Bestimmungen der DBP-Verfügung 523/1969, Amtsblatt 113/1969, und Grenzwertklasse "A" der VDE0871, funkentstört ist.

Das Zentralamt für Zulassungen im Fernmeldewesen der Deutschen Bundespost (DBP), hat diesem Gerät eine FTZ-Serienprüfnummer zugeteilt.

Betriebsgenehmigung

Hochfrequenzgeräte dürfen erst in Betrieb genommen werden, nachdem hierfür von dem für den vorgesehenen Aufstellungsort zuständigen Fernmeldeamt mit Funkstörungsmeßstelle die Genehmigung erteilt ist.

Als Antrag auf Erteilung einer Genehmigung dient eine Anmeldepostkarte (Anhang des Handbuches) mit Angabe der FTZ-Serienprüfnummer.

Der untere Teil der Postkarte ist vom Betreiber zu vervollständigen und an das örtliche Fernmeldeamt zu schicken. Der obere Teil bleibt beim Gerät.

Betreiberhinweis

Das Gerät wurde funktechnisch sorgfältig entstört und geprüft. Die Kennzeichnung mit der Zulassungsnummer bietet Ihnen die Gewähr, daß dieses Gerät keine anderen Fernmeldeanlagen einschließlich Funkanlagen stört.

Sollten bei diesen Geräten ausnahmsweise trotzdem, z.B. im ungünstigsten Fall beim Zusammenschalten mit anderen EDV-Geräten, Funkstörungen auftreten kann das im Einzelnen zusätzliche Funkentstörungsmaßnahmen durch den Benutzer erfordern.

Bei Fragen hierzu wenden Sie sich bitte an die örtlich zuständige Funkstörungsmeßstelle Ihres Fernmeldeamtes.

Externe Datenkabel

Sollte ein Austausch der von Digital spezifizierten Datenkabel nötig werden, muß der Betreiber für eine einwandfreie Funkentstörung sicherstellen, daß Austauschkabel im Aufbau und Abschirmqualität dem Digital Originalkabel entsprechen.

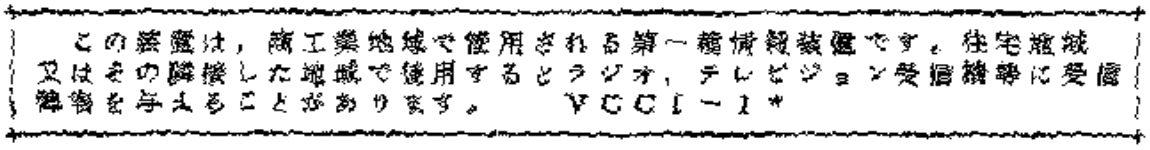
Kennzeichnung

Die Geräte werden bereits in der Fertigung mit der Zulassungsnummer gekennzeichnet und mit einer Anmeldepostkarte versehen. Sollte Kennzeichnung und Anmeldepostkarte übergangsweise nicht mit ausgeliefert werden kontaktieren Sie bitte das nächstgelegene Digital Equipment Kundendienstbüro.

4.7 USER MANUAL STATEMENTS FOR JAPAN

4.7.1 Class I Equipment

Instruction manuals supplied to users of Class I ITE shall contain the following information.



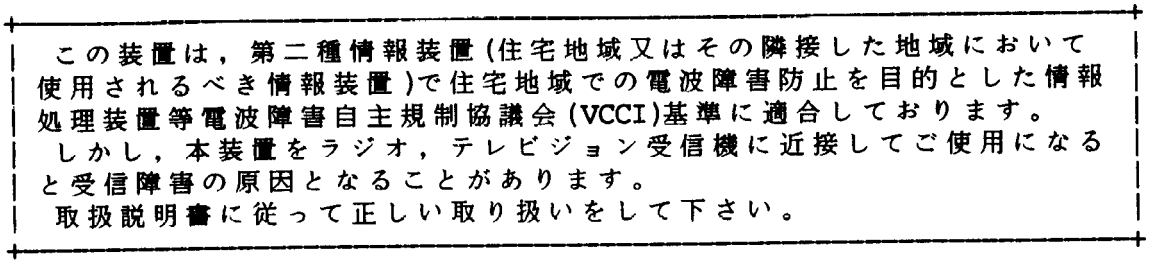
Translation: This equipment is in the 1st Class category (information equipment to be used in commercial and/or industrial areas) and conforms to the standards set by the Voluntary Control Council for Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in commercial and/or industrial areas.

Consequently, when used in a residential area or in an adjacent area thereto, radio interference may be caused to radios and TV receivers, etc.

Read the instructions for correct handling.

4.7.2 Class II Equipment

Instruction manuals supplied to users of Class 2 ITE shall contain the following information or its equivalent.



Translation: This equipment is in the 2nd Class category (information equipment to be used in a residential area or an adjacent area thereto) and conforms to the standards set by the Voluntary Control Council for Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in such residential area.

When used near a radio or TV receiver, it may become the cause of radio interference.

Read the instructions for correct handling.

4.7.3 Equipment for which Measurements Were Taken at a User's Site

The following information, as well as the information in the above two subheads, shall be printed in instruction manuals supplied to a user of equipment for which a report was submitted, based on the measurements taken at a user's site of installation.

この装置は，現在設置されている場所で妨害波の設定がされた情報処理装置であり，情報処理装置等電波障害自主規制協議会(VCCI)基準に適合しております。
従って，現在設置されている場所以外で使用する場合は，その場所で，使用前に再び妨害波を測定し，ＶＣＣＩ協議会に届出をしなくてはなりません。

Translation: This equipment is an information device concerning which radio interference was measured at the place where the equipment is currently installed and the equipment conforms to the standards set by the Voluntary Control Council for Interference by Data Processing Equipment and Electronic Office Machines.

Consequently, when used outside the area where the equipment is currently installed, radio interference shall be measured again at the place prior to use thereof and the measurement shall be reported to the Council.

5 LICENSE APPLICATION CARDS AND EMI APPROVAL NUMBERS

Some external agencies, such as the FCC in the United States and the Post Office (Deutsche Bundespost) in Germany, as part of the approval process, require that the approval numbers appear on the product (label) and/or the inclusion of a license application postcard with each product shipped. The product design group is responsible for implementing any labels, registration numbers, or license application postcards. The license application card may be incorporated in the user's guide or operator's manual, provided it is removable by the customer. Sample postcards are available from the German Country Regulatory Manager, or the EMC Domain Office.

The bill of materials (BOM) must include the part number of the label showing the EMI approval and the license application postcard, if applicable.

The unit assembly (UA) drawing must specify the location of the label on the product showing EMI approval numbers and/or statements.

See *DEC STD 062-2 German EMI Certification/Approval Process for Products* for specific information on German EMI registration postcards and EMI approval numbers.

6 COMPLIANCE APPROVAL PROCESS

6.1 INTERNAL APPROVALS (Class A 60 Hz and Class B 50 Hz)

Each product that changes approval status from noncompliant or untested to Class A or B must pass EMI tests in two different system environments. These tests are system level tests; that is, if the device for which the status change is sought is part of a system, then the total system must pass the technical requirements. Typically, these two system configurations should cover the application range for the product being investigated.

Wherever possible, the minimum system configuration for testing purposes consists of the following.

- A CPU with as much memory as practical (it does not need to be the maximum configuration)
- A disk or other mass storage device that is not incorporated in the CPU box
- A console terminal
- A communications option with at least one terminal (or modem) connected
- Ethernet connection to Ethernet component(s)

After the device in question has passed these two systems level tests, a product approval report is written by the responsible EMC engineer. This person evaluates the test against the standards' requirements in terms of technical accuracy, the hardware selection, and the test results. A copy of the test report with its conclusions must be sent to the Corporate EMC Domain Office.

A quality assurance plan (QAP) must be available and agreed upon before a product meets the requirements of this standard. The requirements for a QAP plan are defined in *DEC STD 103-7, Electromagnetic Compatibility - Quality Process, proposed*[1] .

The EMC Engineering Group Manager or designated individual then issues a statement of compliance (for example, a memo) addressed to the (internal) customer. Typically, the customer is the engineering or product manager for the specific product. The statement of compliance must summarize the test results and be included in the test report.

When engineering prototypes are being tested, the approval statement is preliminary and may be contingent on the testing or retesting of actual production quality devices. Regulatory compliance labels may only be affixed to devices similar to those that successfully completed type testing.

6.2 EXTERNAL APPROVALS

For those products requiring external approvals (Class B personal computers and associated peripherals for the United States; Class A CPU, systems, and peripherals for Germany), the EMC Domain Office will handle test reports, document submission, and the organization of any special test(s) that might be required.

External approval processes for Germany are detailed in DEC STD 62-2.

[1] This section of DEC STD 103 is under development. Use VTX SMC to verify this document's availability. Contact your EMC Domain Manager for the most recent information

6.3 APPROVAL RECORDS

The Corporate EMC Domain Office is responsible for keeping records of the current approval status of all relevant products.

NOTE

This document has been corrected according to Errata Number CTS03. In subhead 3.1.1, the incorrect reference to DEC STD 103-2 has been replaced with the correct reference to DEC STD 103-3.

APPENDIX A ITEMS TO INCLUDE IN A TEST REPORT (PER ISO 45)

A.1 TEST ITEMS

The following list indicates information to be presented in a test report, according to ISO 45, section 4. All of these items are required for external reports, and are recommended for internal reports.

The test report shall:

a. Be labeled "TEST REPORT."

b. Have unique identifying information repeated on every page. Each page shall be paginated with the page number and the total number of pages.

c. List the name and address of the test laboratory.

d. Include the name and address of the client ordering the test(s).

e. Identify the specific test item.

f. Identify the purpose and scope of the test. If the testing did not cover all the EMC requirements relevant for the product, the report shall state that it did not.

g. Identify the test methods used.

h. Describe the testing procedure with all the details of the test(s) that were conducted. Reference may be made to standard test procedures.

i. Identify the specific test equipment that was used.

j. Identify sampling procedures, if used.

k. Identify use of subcontractors.

l. Present test results accurately, clearly, and completely. Give the dates on which the tests were performed.

m. State any additional test information or conditions of use of the test report.

n. List the date of issue of the report. The report shall be signed or otherwise marked to indicate the person(s) accepting responsibility for the test report.

Correction and/or additions to a report may not be made after it has been issued. If it is necessary to issue a supplement report, it must meet the same requirements as the original report.

APPENDIX B REFERENCED DOCUMENTS

B.1 EL-Class Digital Documents

EL-Class Number	Document Title
EL-00062-02	*DEC STD 062-2 German EMI Certification/Approval Process*
EL-00103-02	*DEC STD 103-2 Electromagnetic Radiation (EMC) - Calibration of Test Facilities and Instrumentation*
EL-00103-03	*DEC STD 103-3 Electromagnetic Compatibility (EMC) - Electromagnetic Interference (EMI) Requirements*
EL-00103-07	*DEC STD 103-7 Electromagnetic Compatibility (EMC) - Quality Process*
EL-00178-03	*DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to Be Sold*

Use VTX SMC to order copies of EL-class documents from Standards and Methods Control. Send distribution questions to JOKUR::SMC or call DTN: 234-4423.

B.2 Other Documents

Document Number	Document Title
CISPR-22	*Limits and Specifications of Measurement of Radio Interference Characteristics of Information Technology Equipment*
DBP DIR. 1046/1984	*General License in Accordance with the Law on the Operation of High Frequency Equipment*
DBP DIR. 523/1969	*Law on the Operation of High Frequency Equipment*
FCC PART 15 (1989)	*FCC Rules and Regulations, Part 15 Radio Frequency Devices*
ISO/IEC GUIDE 45	*Guidelines for the Presentation of Test Reports*
VCCI	*Voluntary Committee for Control of Interference*

B.3 Ordering Information

Following are the sources for documents not available from Standards and Methods Control.

NOTE

All documents are available from the EMC Domain Office

- Comité International Spécial des Perturbations Radioélectriques (CISPR)
  (International Special Committee on Radio Interference)
  Materials may be obtained from the EMC Domain Office.
- International Standards Organization (ISO)
  Materials may be obtained from the EMC Domain Office.

- US Government Printing Office
  Materials may be obtained from the EMC Domain Office.
- VDE-Verlag GmbH, 1 Berlin 12, Germany
  or
  Technical Help to Exportes, British Standards Institution,
  Marylands Avenue, Hemel Hempstead, Herts, England